

Application Serial No. 10/577,017
Reply to office action of January 7, 2009

PATENT
Docket: CU-4798

REMARKS/ARGUMENTS

Reconsideration is respectfully requested.

Claims 1-3, 5-12, and 16-17 are pending before this amendment (claims 13-15 are withdrawn). By the present amendment, no claims are amended as none is deemed necessary for the reasons below. No new matter has been added.

In the office action (page 2), claims 1-3, 5-11 and 16 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Publication No. 2004/0070064 (Yamane) in view of U.S. Publication No. 2003/0038415 (Anderson). Also, in the office action (page 3), claim 12 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Yamane in view of Anderson et al as applied to claims 1-3, 5-11 and 16 and further in view of U.S. Publication No. 2004/0150104 (Terui). Further, in the office action (page 4), claim 17 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Yamane in view of Anderson, and further in view of U.S. Publication No. 2003/0185484 (Chakravorty). The "et al." suffix is omitted in a reference name.

The applicant respectfully disagrees.

With regards to claim 1, the examiner cites Yamane as allegedly disclosing an electronic element, an interposer, a plurality of post electrodes, etc. It is submitted that Yamane discloses, in Figure 20K thereof, a method comprising the steps of: forming a depression in a base 50(72) such that a post electrode (23) projects therein (Yamane, Figure 20K); mounting a chip (20) upon the post electrode (23); and filling the surrounding of the chip with a resin (74). Reference should be made to [0103] on page 5 of Yamane.

In the office action (page 3), the examiner concedes that Yamane fails to teach the feature of the present invention of --the electronic element and the interposer base are made of silicon-- as recited in each of independent claims 1, 2 and 16.

To make up for the missing subject matter, the examiner cites Anderson and contends that Anderson discloses an electronic element and an interposer base made of silicon/same material. Anderson discloses a compliant interposer 36 having spaced legs 202 and 204 extending from a base portion 200, with each of the legs 202, 204 and

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base portion 200 having a seat and a tab (Anderson [0050] on page 3). Anderson discloses in [0022]-[0023] a die made of silicon or glass and an interposer made of silicon.

The applicant notes that the prior art must be considered in its entirety, including disclosures that teach away from the claims (MPEP §2141.03 VI). "A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention." *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220. Furthermore, obviousness requires a reasonable expectation of success (MPEP 2143.02).

However, the alleged combination of Yamane in view of Anderson inevitably necessitates the process of filling of the depression shown in Figure 20K of Yamane with a silicon layer in place of the resin layer 74 shown in Yamane (probably by a CVD process).

Such a process, however, requires deposition of a macroscopic amount of silicon in the order of grams, which is outside of the conventional technology of silicon film formation. Conventionally, silicon film has been formed with the thickness in the order of several hundred nanometers in the maximum, never in the order of several hundred microns to 1 millimeter. It should be noted that, as understood, the silicon chip 20 shown in Figure 20K has the thickness of generally several hundred microns, and thus, the depression formed in the base 50 (72) shown in Figure 19J should have a depth of as large as 1 millimeter.

In view of the fact that the silicon chip is already formed with miniature semiconductor integrated circuits, and further in view of the fact that filling of the depression with a silicon film of such a large thickness would require continuous deposition for a very long time, the integrated circuits in the silicon chip would be damaged by the heat with such a process, and it is respectfully submitted that a person skilled in the art would not have used the process of filling the depression with silicon.

Accordingly, the applicants respectfully submit that the combination of Yamane and Anderson is improper, and that Yamane teaches away from the teaching of Anderson. As such, the applicant respectfully submit that the subject matter as set forth in claim 1 is nonobvious.

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Regarding **claims 2 and 16**, the remarks made above are equally applicable to the rejection of claims 2 and 16. Accordingly, for the same reasons, the applicants respectfully submit that claims 2 and 16 are patentable over the applied references.

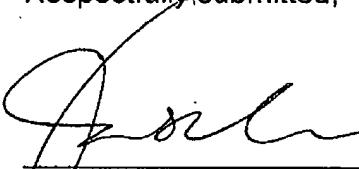
As to **claims 3, 5-12 and 17**, neither Terui nor Chakrovorty cure the deficiencies of Yamane and Anderson. Accordingly, the applicants respectfully submit that these claims are allowable at least since they depend from claims 1, 2, and 16, which are now considered to be in condition for allowance for the reasons above.

For the reasons set forth above, the applicant respectfully submits that claims 1-3, 5-12, and 16-17 pending in this application are in condition for allowance over the cited references. Accordingly, the applicant respectfully requests reconsideration and withdrawal of the outstanding rejections and earnestly solicit an indication of allowable subject matter.

This amendment is considered to be responsive to all points raised in the office action. Should the examiner have any remaining questions or concerns, the examiner is encouraged to contact the undersigned attorney by telephone to expeditiously resolve such concerns.

Respectfully submitted,

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